California Cancer Commission Studies*

Chapter XXI

Cancer of the Anus, Rectum and Rectosigmoid

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THIS chapter will be limited, insofar as anatomical boundaries and symptoms permit, to discussion of cancer of the anus, rectum and rectosigmoid. The rectosigmoid has no definite landmarks, but will be considered to comprise that portion of the bowel above the ampulla of the rectum and below the movable portion of the sigmoid, the upper part lying at and just above the pelvic peritoneal reflection.

INCIDENCE

According to the Bureau of Vital Statistics, cancer of this area is ranked number four in frequency among all cancers of the body. In 1890 there were two deaths per 100,000 population reported as caused by cancer of the anus, rectum and rectosigmoid, and in 1940 6.7 deaths per 100,000 were reported from this cause. This apparent increase, however, may be accounted for, in part at least, by better clinical and postmortem diagnosis.

The majority of patients with this disease are between 50 and 75 years of age, but 20 per cent are under 50. About 3 per cent of cancers in this area of the body occur in patients between the ages of 20 and 30. It is in this decade of life that they are most often overlooked and for this reason are either inoperable or incurable when the diagnosis is made. There is no "cancer age."

DIAGNOSIS

There are few early signs or symptoms. Symptoms commonly related by patients are change in bowel function (especially frequency, which is too often called diarrhea, or dysentery) with an unsatisfied desire to stool; the passage of blood and mucus; abdominal discomfort; loss of appetite; nausea and vomiting. Pain is not marked except in anal lesions.

Often the patient reports rectal bleeding, and this should never be attributed to hemorrhoids without a digital, proctoscopic examination and roentgen studies to rule out the presence of more serious lesions higher in the bowel.

Proper palpation of the rectum with the patient in the lateral position will reveal 80 per cent of the lesions in this area. The lesion may be a polyp, with a pedunculated or sessile base, a broad flat soft villous adenoma, a polypoid mass, a craterlike ulcer with hard margins or an annular lesion involving all surfaces of the bowel. (See Figure 1.) By use of the sigmoidoscope these lesions can be visualized.

Cancer at the anal opening may resemble a chronic anal ulcer with an indurated base, and may originate in the perianal and perirectal glands as an adenocarcinoma, or from the anal integument as an epithelioma (epidermoid carcinoma). (See Figure 2.) The epithelioma may metastasize to the inguinal nodes, as well as spread upward in the perirectal spaces.

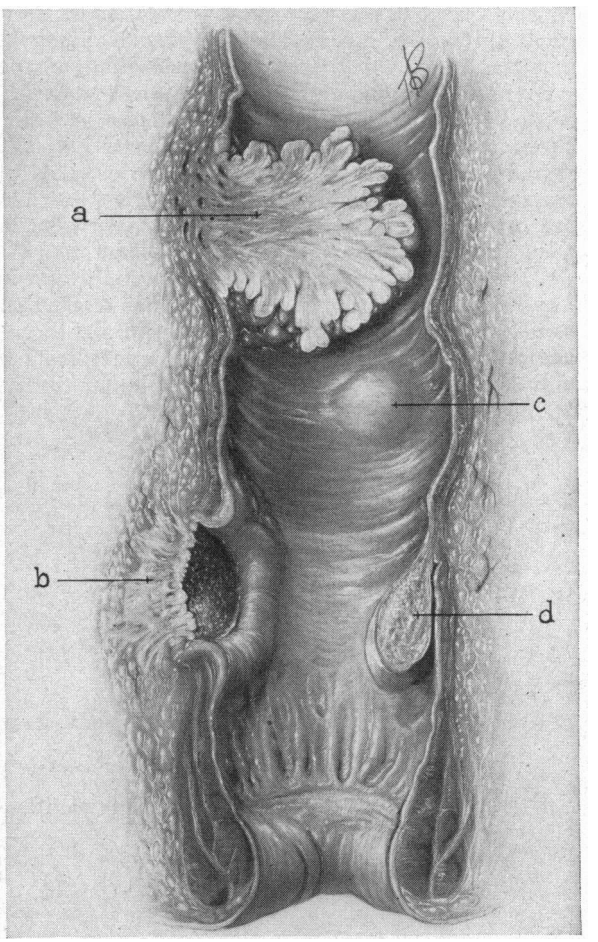

Figure 1. Drawing illustrating: (a) Polypoid carcinoma with moderate involvement of the bowel wall, (b) Ulcerating carcinoma with marked penetration of bowel wall and with rolled up edges, (c) Adenoma which may become a polyp or a cancer, (d) Benign polyp on short pedicle. The mucus membrane is normal.

All suspicious lesions should be biopsied. If the first specimen is negative the biopsy should be repeated. Sigmoidoscopic examination should be done under intravenous anesthesia if the instrument cannot be passed to eight inches, especially if bleeding is a constant symptom. Negative findings in a roentgen examination with barium enema are not conclusive in the lower eight inches of the colon and may be dangerously misleading because a filling defect is usually obscured by other loops of bowel. A barium enema should never be given preceding the sigmoidoscopic examination. When given at any time it

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should be done with caution lest a partial obstruction be made total.

Pathologists differ widely in the diagnosis of adenomas and polyps. Many classify them as Grade I carcinomas, whereas others will call the same lesions benign. (Figure 3.) These lesions should always be regarded at least as premalignant.

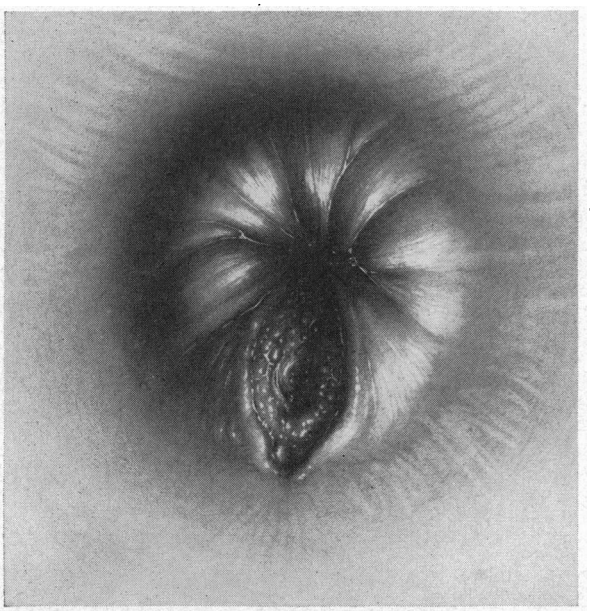

Figure 2. Anal epithelioma, or epidermoid carcinoma. Shows ulceration of anal integument involving deep structures. May resemble other anal ulcerative lesions.

The grading of frank adenocarcinomas should not influence the treatment; whatever the grade, radical removal is indicated. (Figure 4.)

Differential diagnosis must be made from sarcomas (rare), metastases from upper abdominal lesions (stomach, pancreas, ovary, uterus, bladder, colon), prostatic disease, from ulcers due to X-ray or radium therapy, from chronic infection such as amebic granulomas, lymphogranuloma inguinale, chronic ulcerative colitis, ordinary chronic anal fissures and tuberculosis and luetic ulcers. Biopsies are necessary to rule out carcinoma.

TREATMENT

The patient is entitled to every means for a cure and should not be denied an exploratory procedure unless the case is utterly hopeless. The object of treatment is to cure the cancer or prolong life for a maximum period with a minimum of disability and discomfort. The patient should be informed of the seriousness of his condition and that his cooperation is essential for recovery. The patient who is a poor surgical risk should be built up generally so that he can stand the radical procedure. Occasionally it may be necessary to do the operations in two stages.

Operability and curability must be determined by

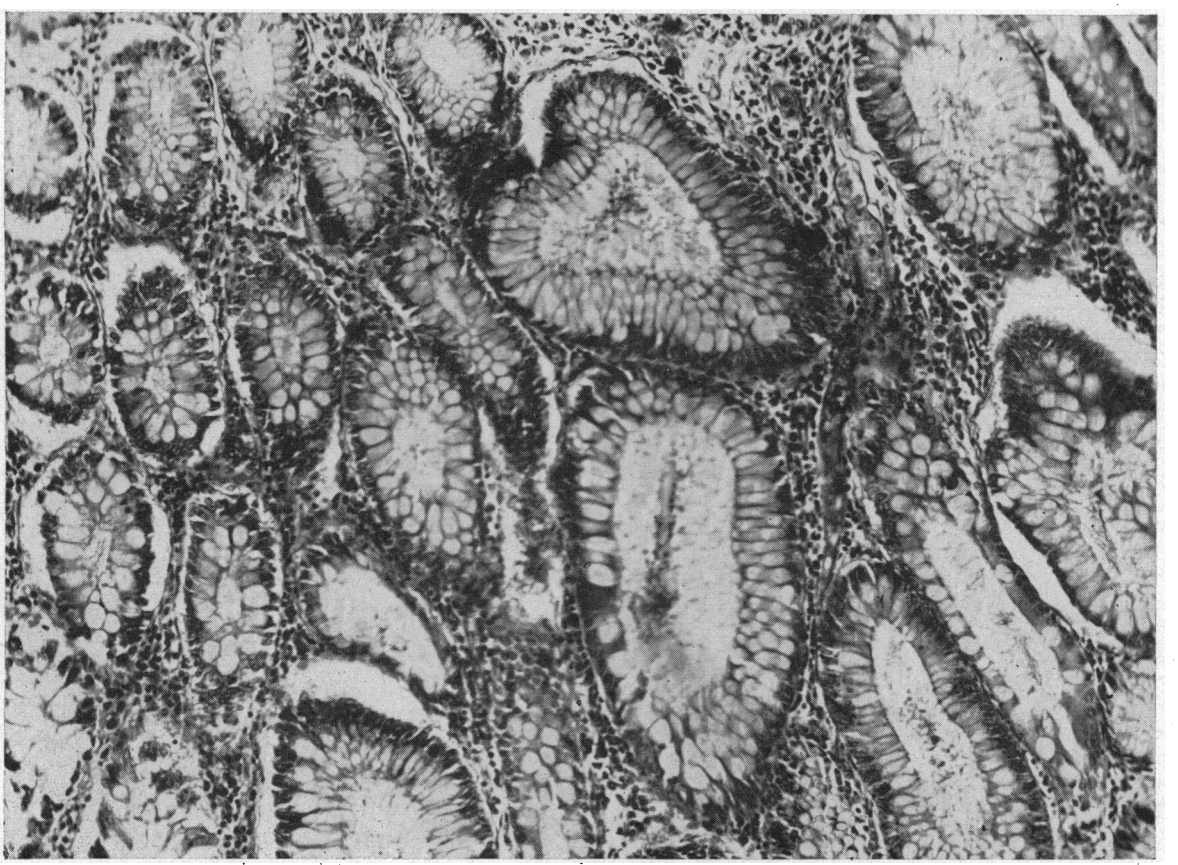

Figure 3. Adenoma of rectum (x 65) normal glandular epithelium at left. To right adenomatous epithelium exhibiting slight hyperchromatism of nuclei and almost perfect polarity but producing larger imperfectly shaped glands.

an evaluation of all the factors concerned, such as age and general condition of patient, type, size and location of growth, and the presence of metastases. Small movable tumors are often more likely to spread earlier than those which have become surrounded by inflammatory tissue. A tumor which may be resectable may be inoperable because of the poor general condition of the patient. Curability can be estimated only in the absence of demonstrable metastases.

Cure of cancer of the rectum involves many factors. Cancer cells infiltrate locally and spread to remote areas by way of lymphatics and veins, therefore the most radical removal of the growth with the structures which transmit these cells is essential, even though it entails complex changes in the anatomy of the individual. The surgeon should be competent to perform all accepted procedures, and should be capable of planning and carrying out the operation best suited to the individual patient.

A number of surgical procedures require a permanent abdominal colostomy. To obviate the necessity of the abdominal artificial anus (which the patient and his medical advisors are still somewhat loath to accept because of the unfounded stigma attached to it or because they have not been trained in its management), many procedures have been tried and many found inadequate or undesirable. An uncontrollable perineal anus has been proven less practical than one in the abdomen, which can be managed with much less effort. The objections to an abdominal anus are unfounded. A properly constructed colostomy, irrigated thoroughly every other day will not be odorous nor will it soil the patient's clothing.

ABDOMINOPERINEAL RESECTION

The present consensus is that the combined abdominoperineal resection of the rectum and rectosigmoid with a permanent abdominal colostomy offers the best chance of cure in the majority of cases. The one-stage procedure is the method of choice in good risks. For those in whom medical decompression of an obstructed colon has not been successful, a cecostomy or transverse colostomy should be done and this followed in a short time by the combined abdominoperineal resection. (Figure 5.)

COLOSTOMY AND POSTERIOR RESECTION

Another method, the colostomy and posterior resection, is suitable for removal of low growths in

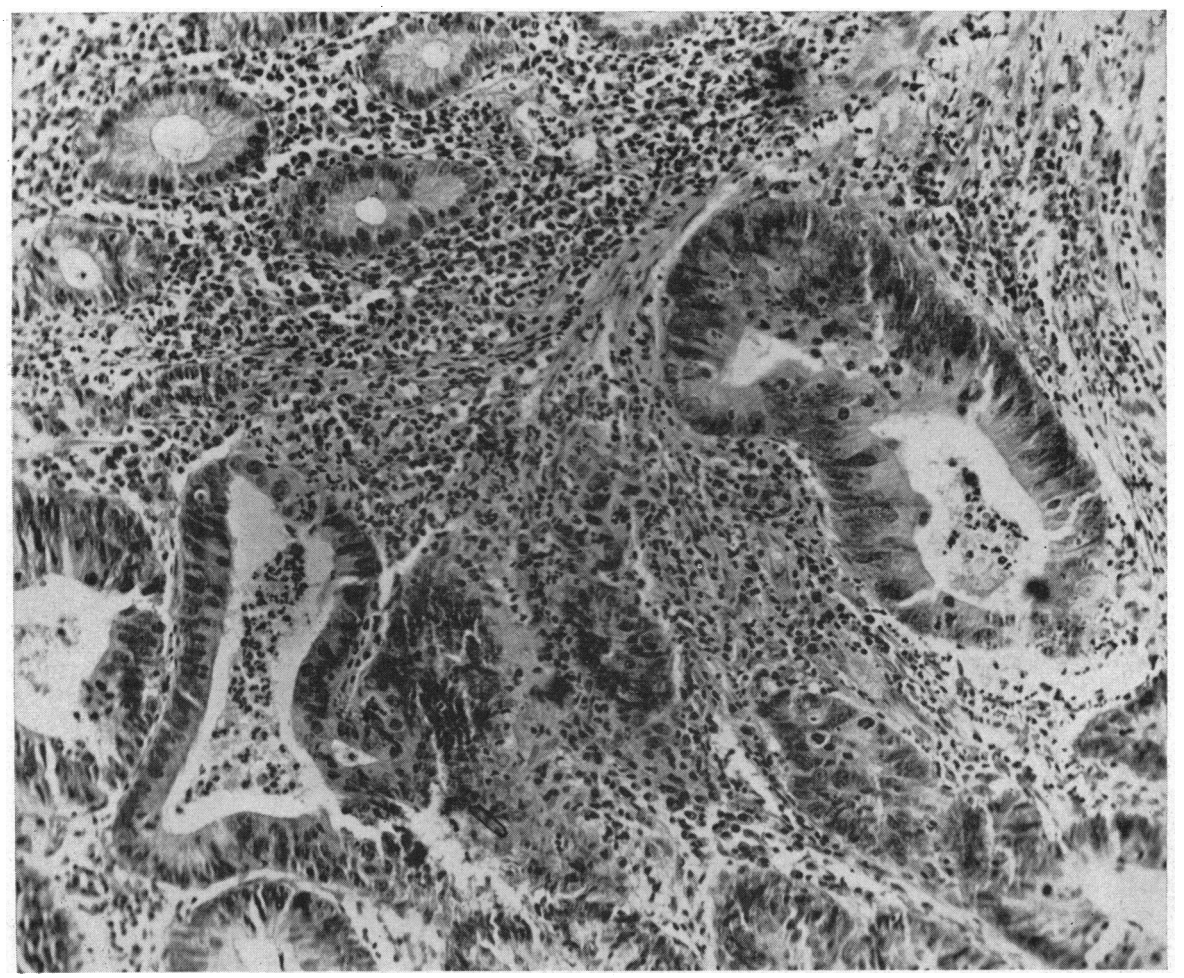

Figure 4. Adenocarcinoma of rectum (x 75) grade II malignancy. Normal glandular tissue at upper left. Tumor tissue at right exhibits very irregular glands made up of cells exhibiting marked hyperchromatism, occasional abnormal mitoses and loss of polarity. The stroma is considerably infiltrated by leukocytes.

certain patients who are *poor surgical risks* because of cardio-circulatory-renal impairment or in patients who are at an age at which the expectancy of life is limited. The amount of the bowel and lymphatic structures removed is not as great as the amount removed in the abdominoperineal procedure.

COLOSTOMY AND ANTERIOR RESECTION

High rectal and rectosigmoid growths, in the presence of metastases, may be removed by anterior resection, the lower rectal stump being left *in situ*. A permanent abdominal colostomy is established.

ANTERIOR RESECTION WITH END-TO-END ANASTOMOSIS

Several surgeons have advocated and performed resections of lesions in the rectosigmoid and upper rectum with reestablishment of continuity of the bowel, with or without complementary temporary colostomy. This would be the ideal procedure if it did not jeopardize the chance of cure by failing to remove all the cancer-carrying elements. Several techniques for this operation have been described, the merits of which cannot be determined without the test of time. Constriction of the anastomotic site is one of the disadvantages of this procedure.

PROCTOSIGMOIDECTOMY WITH PRESERVATION OF ANAL SPHINCTERS

Abdominoperineal resection without abdominal colostomy and with preservation of the anal sphincter (so-called "pull-through operation") is the method of choice with some surgeons in selected cases. The lesion must be far enough above the anus (2 or 3 inches) to insure removal of downward lymphatic spread, and the length of the viable sigmoid must be adequate to reach well beyond the anal outlet. There is considerable controversy concerning the degree of bowel control following this procedure.

Anal epitheliomas (Figure 6) are treated by radical surgical removal (abdominoperineal resection) followed by block dissection of both inguinal regions.

A curative, and also a preventative, procedure is the destruction of all adenomas, polyps and papillomas by cauterization or desiccation. Removal of all such lesions is essential in the preventative program.

Other methods of treatment—local excision, colostomy and perineal excision, cauterization, fulguration and irradiation—should be considered as palliative and not curative. Colostomy relieves obstruction only. The removal of the primary lesion, even in the incurable, affords a comfort to body and mind that is worth the hazard and effort.

MANAGEMENT

Success depends upon a correlation of all clinical tests: complete blood examination; blood chemistry determinations; estimation of nonprotein nitrogen; determination of prothrombin level; serum albumin and liver function tests when liver damage is suspected. The internist or cardiologist should interpret the electrocardiogram tracings and physical findings in terms of surgical risk. It is essential to have an x-ray film of the chest. Finding of a small or moderate metastasis does not contraindicate removal of

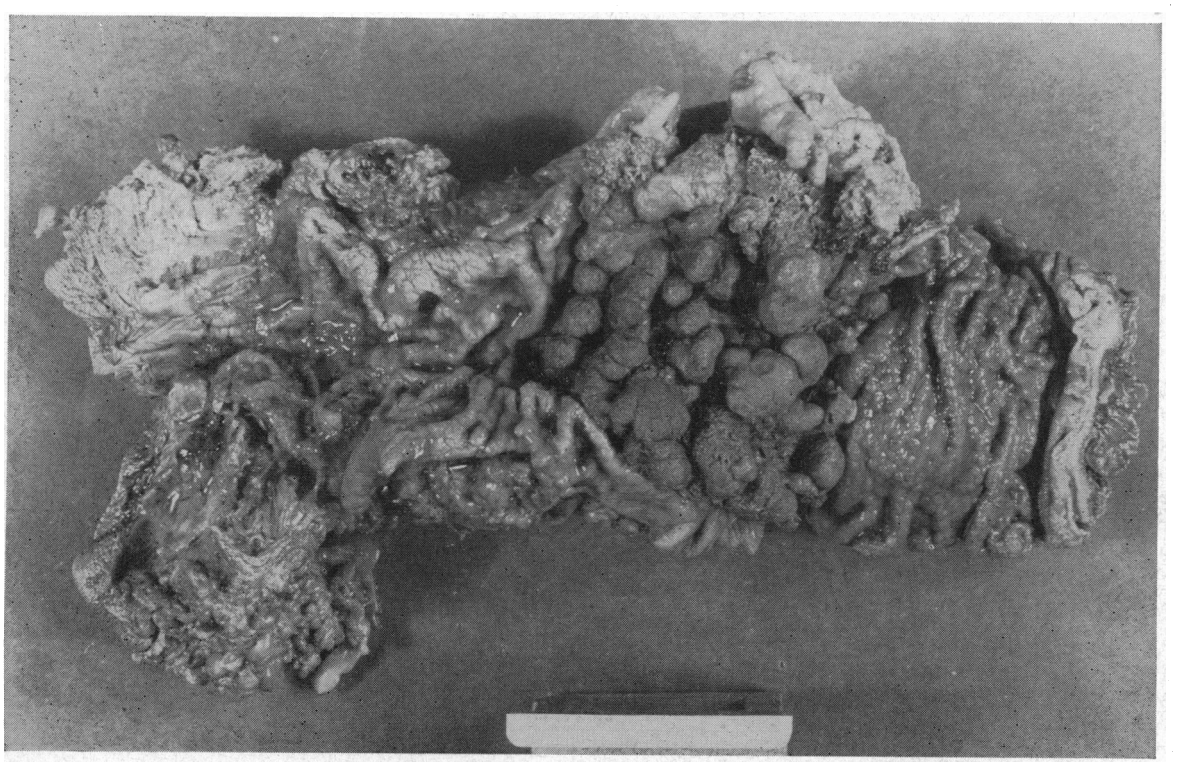

Figure 5. Photograph of excised rectum with annular ulcerating nodular lesion involving the mid-portion.

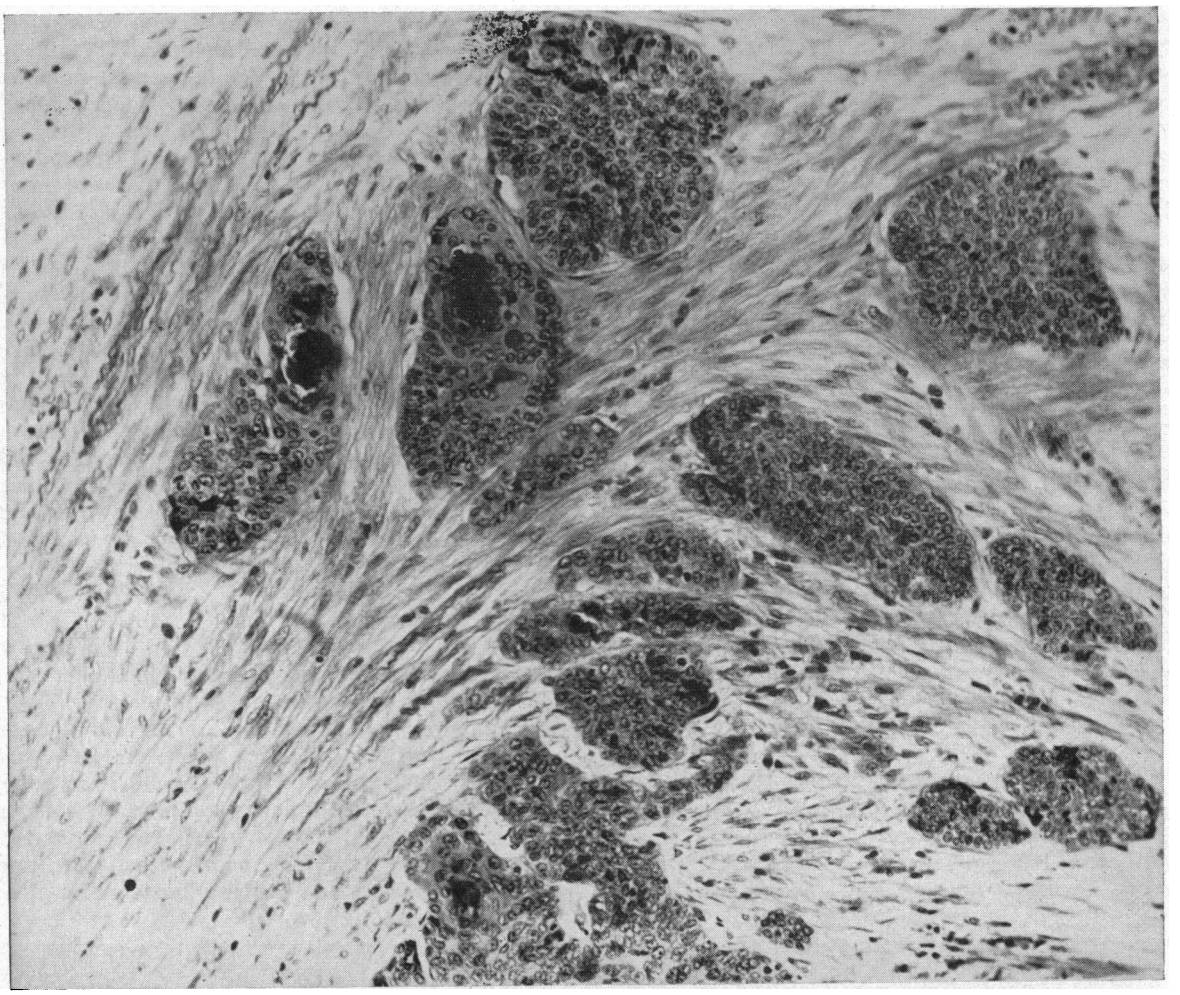

Figure 6. Epidermoid carcinoma of anus (x 70). There is no normal tissue present for comparison. The lesion is composed of irregular masses of squamous cells in the centers of some of which are masses of keratin, "epithelial pearls" (black in photograph).

the primary lesion. Cystoscopic study of the bladder, ureters and kidneys is essential in the presence of growths which may involve these organs. Vitamin deficiencies must be corrected, and anemia, which is a common finding, must be overcome by repeated transfusions of whole blood.

The bowel must be decompressed by saline irrigations, mineral oil and castor oil. A sulfa drug (sulfasuxidine at present is most favored) is given in appropriate doses for approximately one week before operation. This is essential in those cases in which a resection and anastomosis is contemplated. Thorough decompression is of paramount importance in all cases because the handling of a distended bowel predisposes to peritonitis with all its sequelae, especially small bowel obstruction.

Postoperative care entails a careful watch for and prompt treatment of such complications as shock, atelectasis, hemorrhage, circulatory collapse, phlebitis, obstruction, peritonitis and embolism. When whole blood is not available to combat shock, plasma and washed red cells are valuable.

SUMMARY

1. There is no "cancer age."

2. Any abnormal manifestation of bowel function should be considered to be the result of onset of cancer until cancer is disproved.

3. Routine thorough rectal palpation and instrumental examination are essential.

4. X-ray examination, especially with barium enema, should never be carried out prior to a sigmoidoscopic examination when cancer of the rectum is suspected.

5. The surgical procedure should be selected for each individual.

6. The growth should be removed whenever possible.

7. Proper preoperative and postoperative management is essential in decreasing morbidity and mortality.

"Cancer of the Liver, Gallbladder, and Extrahepatic Ducts, and Pancreas" by William F. Rowe, M.D., and E. Eric Larson, M.D., Chapter XXII of the California Cancer Commission Studies, will appear in this section in the September issue of CALIFORNIA MEDICINE.